



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,729	07/16/2003	Shigeaki Imai	15162/06040	9030

24367 7590 01/18/2008
SIDLEY AUSTIN LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

EXAMINER

YUAN, KATHLEEN S

ART UNIT	PAPER NUMBER
----------	--------------

2624

MAIL DATE	DELIVERY MODE
-----------	---------------

01/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/620,729

Applicant(s)

IMAI ET AL.

Examiner

Kathleen S. Yuan

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The response received on 12/31/2007 has been placed in the file and was considered by the examiner. An action on the merit follows.

Response to Amendment

1. The amendments filed on 31 December 2007 have been fully considered.

Response to these amendments is provided below.

Summary of Arguments/ Amendments and Examiner's Response:

2. *The applicant has amended claims and argued claims for the previous 112 rejections.*

3. The amendments and arguments are convincing, and all 112 rejections are overcome.

4. *The applicant has amended the independent claims to include new limitation regarding the positional control of the two cameras, such that when a first camera detects an object, the other camera responds to result in an overlapping range.*

5. The applicant has overcome the previous rejection and a new rejection follows below.

6. *The applicant argues that the Yamashita reference "fails to disclose ...a switching portion for switching between the two-dimensional measurement portion and the stereoscopic measurement portion to perform an operation. The claim requires a portion which changes the operation of the device between a first approach where the*

Art Unit: 2624

two-dimensional measurement portion is used to perform an operation and a second approach where the stereoscopic measurement portion to perform an operation. In contrast, Yamashita merely selects which one of the frame of video is to be used. Thus, Yamashita fails to disclose the switching device of claim 1."

7. This argument is moot because with further consideration, Kawashima et al teaches a switching portion.

Claim Rejections - 35 USC § 112

8. Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 4, 5, 18, 25, and 30 refer to "an overlapping range" when the applicant has previously claimed "an overlapping range in the claims' independent claims. It is unclear if the range claimed in the dependent claims is the same as the range in the independent claims. Appropriate correction is required.

10. Claims 21 and 27 refer to "at least a first...cameras" in lines 21 and 23, respectively. The applicant previously claims "at least first one of cameras" earlier in the claim. It is unclear if "a first" camera in lines 21 and 23 refer to the same camera previously claimed. Appropriate correction is required

11. Claims 28 and 29 claim "a first one of the cameras" and "a second one of the cameras" when both of these cameras have been previously claimed in claim 26. It is

Art Unit: 2624

unclear if the applicant wishes to claim further cameras, or if these correspond those that are in claim 26. Appropriate correction is required.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-6, 8, 13, 14, 16-23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6079862 (Kawashima et al) in view of U.S. Patent No. 6812835 (Ito et al).

Regarding claim 26, Kawashima et al discloses an apparatus comprising: a camera positional control device which is configured to generate signals to control the positions of the cameras to change photographing directions of the cameras (fig. 14, items 10a and 10b), the signals being whatever signals the moveable tables must generate to move the cameras; a two-dimensional image processing system which is configured to perform two-dimensional evaluation of image data, an object recognition and a coordinate measurement, obtained by at least a first one of the cameras to detect an object (fig. 14, items 5a, 5b, 15a and 15b); a stereoscopic image processing system (fig. 14, item 14) which is configured to perform stereoscopic evaluation of image data, a 3D coordinate, obtained from both the first one of the cameras and a second one of the cameras to detect an object (fig. 14, items 4a and 4b provide image data for all

Art Unit: 2624

measurements including detecting an object: items 5a and 5b and other image data such as the coordinate calculation: items 15a and 15b, and continues to 3D measurements, fig. 14, item 14); and a controller which is configured to control the operation of the cameras and the camera positional control device (fig. 14, items 12a and 12b and any of the arrows or processes that control the operation of the device, in particular, the arrow between 15a and 15b to item 14), said controller also being configured to control a mode of operation of the apparatus such that in a first mode, the mode carried out in fig 14, items 5a, 5b 15 and 15b, image data obtained by at least a first one of the cameras is evaluated by said two-dimensional image processing system and in a second mode, the mode carried out in fig. 14, items 14, 6, 11, and 7, image data obtained from both the first one of the cameras and a second one of the cameras are evaluated by said stereoscopic image processing system, since the image data calculated from the previous steps are input all input into item 14, said controller further being configured to switch between said first and second modes of operation, as seen by the arrow switching the mode of operation by continuing the process, based on a current mode of said apparatus, the mode being that the coordinates are calculated from items 15a and 15b, and an output from the two-dimensional image processing system, the output of the 2D mode, which is input for the 3D mode.

Kawashima et al does not disclose expressly that the controller is configured to respond to the detection of an object by said two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one

Art Unit: 2624

of said cameras, based on a detected position of the object by said first one of the cameras, so that the cameras photograph an overlapping range which includes the detected object.

Ito et al discloses a controller that is configured to respond to the detection of an object, that which supplies control signals (col. 2, lines 44-46) by a two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one of said cameras (col. 2, lines 50-57), based on a detected position of the object by said first one of the cameras (col. 2, lines 45-47), so that the cameras photograph an overlapping range which includes the detected object, since both cameras contain the detected object.

Kawashima et al and Ito et al are combinable because they are from the same field of endeavor, i.e. tracking objects.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the second camera after the first camera detected a position.

The suggestion/motivation for doing so would have been to allow for a more secure, robust system by providing more images of the object, with more detail.

Therefore, it would have been obvious to combine 2D/3D cameras of Kawashima et al with the response of a second camera of Ito et al to obtain the invention as specified in claim 26.

14. Regarding claim 27, Kawashima et al discloses that the two-dimensional image processing system is configured in said first mode to perform two-dimensional

Art Unit: 2624

evaluation of image data obtained from at least one of said cameras to detect an object, as detected by the image recognition units (fig. 14, item 5a and 5b), which receives its input from cameras 4a and 4b.

15. Regarding claim 28, Kawashima et al discloses the controller is configured to switch from said first mode to said second mode based on an output from the two-dimensional image processing system, since the arrow between items 15a and 15b to item 14 outputs the information from the first mode, which indicates the presence of an object detected in the image data, obtained by at least one of a first one of the cameras, as executed by the image recognition units (fig. 14, items 5a and 5b), and obtained by both cameras (fig. 14, items 14a and 14b).

16. Regarding claim 1, Kawashima et al discloses a system comprising: a positional control portion for controlling positions of the cameras to change photographing directions of the cameras (fig. 14, items 12a, 12b, 10a, 10b); a two-dimensional measurement portion for conducting two-dimensional measurement of the object based on the image of the object, the measurements being either the image recognition measurements and/or the coordinate calculation measurements, the image being obtained by at least one of the cameras (fig. 14, items 5a, 5b, 15a, and 15b); a stereoscopic measurement portion for conducting stereoscopic measurement of the object, a three dimensional coordinate calculation, based on the images of the object (fig. 14, item 14), the images being obtained by at least two of the cameras said at least two cameras including at least the camera for providing an image for the two-dimensional measurement portion (fig. 14, items 4a and 4b); and switching portion for

Art Unit: 2624

switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7).

Kawashima et al does not disclose expressly that the positional control portion is configured to respond to the detection of an object by said two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one of said cameras, based on a detected position of the object by said first one of the cameras, so that the cameras photograph an overlapping range which includes the detected object.

Ito et al discloses a positional control portion that is configured to respond to the detection of an object, that which supplies control signals (col. 2, lines 44-46) by a two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one of said cameras (col. 2, lines 50-57), based on a detected position of the object by said first one of the cameras (col. 2, lines 45-47), so that the cameras photograph an overlapping range which includes the detected object, since both cameras contain the detected object.

17. Regarding claim 2, Kawashima et al disclose that a 2D measurement portion conducts a 2D measurement based on the image obtained by only one of the cameras when showing that each camera has only one 2D measurement portion (fig. 14, item 4a corresponds to items 5a and 15a and item 4b corresponds to items 5b and 15b). Thus each 2D measurement contains only one 2D portion each.

Art Unit: 2624

18. Regarding claim 3, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), and the cameras are controlled so as to photograph ranges differing from each other, to track object 6 of fig. 16, thus having the different direction Θ_{m1t} and Θ_{m2t} , and to face directions differing from each other, as seen in fig. 16. This is all done when the two dimensional measurement is conducted because these cameras are CCD cameras that obtain images in 2D (col. 15, line 25); in which 3D coordinates can later be calculated (fig. 14, item 14).

19. Regarding claim 4, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), and the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images.

20. Regarding claim 5, Kawashima et al discloses the positional control portion controls the positions of the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}) and face directions different from each other, as seen in fig. 15, when the 2D measurement portion conducts 2D measurement, since the cameras follow an object (col. 15, lines 27-30) and the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must

Art Unit: 2624

be in both the images. Kawashima et al further discloses switching between operating the two-dimensional measurement portion in an initial condition, a condition that the image is taken by cameras (fig. 14, items 4a and 4b), operating the stereoscopic measurement portion (fig. 14, arrow between items 15a and 15b to item 14) when the two-dimensional measurement portion detects a moving object (fig. 14, items 12a and 12b).

21. Regarding claim 6, the positional control portion controls the entire position and posture of the cameras, since items 10a and 10b are rotating tables (col. 15, line 27), allowing for any position or posture of the cameras.

22. Regarding claim 8, in Kawashima et al, positional control portion allows for control of the position and posture of each of the cameras since it allows for rotation about the two axes in fig. 2 of the axis between items 3a and 2, and the axis at 3b, in a synchronous manner because they follow they track object at the same time.

23. Regarding claim 13, Kawashima et al discloses that the camera positional control system is configured to control the positions of the cameras independently from each other when the two-dimensional measurement portion conducts two-dimensional measurement, since one movement of the camera is not dependent on the other movement, they simply follow the object and take images of them (col. 15, lines 25-30), and to control the positions of the cameras concurrently, since they both move at the same time to follow the object, as described above, when/as the stereoscopic measurement portion conducts stereoscopic measurement, since as processing continues, the camera is still following the object.

Art Unit: 2624

24. Regarding claim 14, Kawashima et al discloses the switching is configured to switch between a first mode of measurement of the object based on the images of the object from the cameras using the two-dimensional measurement portion (fig. 14, items 5a, 5b) and a second mode of measurement of the object using the stereoscopic measurement portion, said switching being based on a current mode of measurement, since if the mode is on 2D measurement, then the next mode is 3D measurement, on an output from the two-dimensional measurement portion, since it uses the 2D measurement portion to get through to the 3D portion, as seen in fig. 14.

25. Regarding claim 16, Kawashima et al discloses switching between measurement of the object using the two-dimensional measurement portion (fig. 14, items 5a and 15a) and using the stereoscopic measurement portion (fig. 14, item 14) based on whether an object is detected (fig. 14, item 5a).

26. Regarding claim 17, Kawashima et al discloses a system comprising: a camera position control system for outputting camera position control signals to change photographing directions of the cameras, a movable control unit (fig. 14, items 12a and 12b) which outputs desired movements of the cameras, said camera position control system being configured to enable control of directions of the two cameras independently from each other, since both cameras individually follow the object (fig. 14, item 12a and 12b) and do not move depending on the movement of the other camera; a two-dimensional measurement device for conducting two-dimensional measurement of the object based on the image of the object, the image being obtained by at least one of the cameras (fig. 14, items 5a, 5b, 15a and 15b); a stereoscopic measurement device

Art Unit: 2624

for conducting stereoscopic measurement of the object based on the images of the object, 3D coordinates (fig. 14, item 14), the images being obtained by both of the cameras (fig. 14, items 4a and 4b follow all the way down to item 14); and a switching portion for switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7).

Ito et al discloses a positional control portion that is configured to respond to the detection of an object, that which supplies control signals (col. 2, lines 44-46) by a two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one of said cameras (col. 2, lines 50-57), based on a detected position of the object by said first one of the cameras (col. 2, lines 45-47), so that the cameras photograph an overlapping range which includes the detected object, since both cameras contain the detected object.

27. Regarding claim 18, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), when any of the measurements occur, including the 2D measurements, as shown, for instance, in fig. 15). Furthermore, Kawashima et al discloses that the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images. Kawashima et al discloses switching to operate the two-dimensional measurement portion in an initial condition, the condition that images have

Art Unit: 2624

just been taken (fig. 14, items 5a, 5b, 15a and 15b), and switches to operate the stereoscopic measurement portion (fig. 14, item 14), since after the 2D measurement is done, it moves on to a 3D measurement, when the two-dimensional measurement portion detects an object (fig. 14, items 5a and 5b).

28. Regarding claim 19, Kawashima et al discloses switching to operate the stereoscopic measurement portion, as it continuously does so that the lighting can track the object (col. 15, lines 54-59), when the two-dimensional measurement portion detects a moving object since the 2D measurement portion tracks a moving object (col. 15, lines 28-30), and thus detects the moving object.

29. Regarding claim 20, Kawashima et al discloses that the camera position control system is configured to control the positions of the cameras independently from each other when the two-dimensional measurement portion conducts two-dimensional measurement, since one movement of the camera is not dependent on the other movement, they simply follow the object and take images of them (col. 15, lines 25-30), and to control the positions of the cameras concurrently, since they both move at the same time to follow the object, as described above, when/as the stereoscopic measurement portion conducts stereoscopic measurement, since as processing continues, the camera is still following the object.

30. Regarding claim 21, Kawashima et al discloses a system comprising: a positional control portion for controlling positions of the cameras to change photographing directions of the cameras (fig. 14, items 10a, 10b, 12a and 12b); a two-dimensional measurement portion for conducting two-dimensional measurement of the object based

Art Unit: 2624

on the image of the object, the image being obtained by at least one of the cameras (fig. 14, item 5a, 5b, 15a and 15b); a stereoscopic measurement portion for conducting stereoscopic measurement of the object based on the images of the object, the images being obtained by at least two of the cameras (fig. 14, item 14); and switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7). The switching is configured to control the provision of images from the cameras to the measurement portions, since the switching between 2D and 3D measurements controls the lighting and thus controls the provision of images, all this carried out by a switching portion (col. 5, lines 54-60) such that said at least two of the cameras from which images are obtained for conducting stereoscopic measurement include said at least one of the cameras from which the image of the object is obtained for the two-dimensional measurement portion, since both the images of the objects are used as the portion. From cameras 4a and 4b are used for the 3D measurement.

Ito et al discloses a positional control portion that is configured to respond to the detection of an object, that which supplies control signals (col. 2, lines 44-46) by a two-dimensional image processing system based on an image obtained by at least first one of the cameras, said controller being configured to respond by controlling the positions of the at least a first and a second one of said cameras (col. 2, lines 50-57), based on a detected position of the object by said first one of the cameras (col. 2, lines 45-47), so that the cameras photograph an overlapping range which includes the detected object, since both cameras contain the detected object.

Art Unit: 2624

31. Regarding claim 22, Kawashima et al discloses switching from said two-dimensional measurement portion to said stereoscopic measurement portion based, at least in part, on a measurement of the object conducted by said two-dimensional measurement portion, since the 2D measurement portion of items 15a and 15b are input into item 14.

32. Regarding claim 23, Kawashima et al discloses switching from said two-dimensional measurement portion to said stereoscopic measurement portion (fig. 14, arrow between items 15a and 14) when said two-dimensional measurement portion detects an object (fig. 14, items 5a and 5b).

33. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Ito et al, as applied to claim 1 above, and further in view of U.S. Patent No. 5864360 (Okauchi et al).

Regarding claim 29, Kawashima et al (as modified by Ito et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference. Kawashima et al discloses that the positional control portion allows for control of the position and posture of each of the cameras since it allows for rotation about the two axes in fig. 2 of the axis between items 3a and 2, and the axis at 3b,

Kawashima et al (as modified by Ito et al) does not disclose expressly that the cameras are controlled so as to move symmetrically).

Okauchi et al discloses that two cameras can move about symmetrically (col. 2, lines 36-37).

Art Unit: 2624

Kawashima et al (as modified by Ito et al) and Okauchi et al are combinable because they are from the same field of endeavor, i.e. controlling the movement of image apparatuses.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to control the cameras to move symmetrically.

The suggestion/motivation for doing so would have been to provide a more robust, flexible system to allow the cameras to take panoramic views or to function in a distinct manner.

Therefore, it would have been obvious to combine Kawashima et al (as modified by Ito et al) with Okauchi et al to obtain the invention as specified in claim 7.

34. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Ito et al, as applied to claim 1 above, and further in view of U.S. Patent No. 3267431 (Greenberg et al).

Regarding claim 9, Kawashima et al (as modified by Ito et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al (as modified by Ito et al) does not disclose expressly an alarm output portion for raising an alarm based on an alarm signal output from the switching portion.

Greenberg et al discloses having an indicator to show a mode switch (col. 14, lines 1-5).

Kawashima et al (as modified by Ito et al) and Greenberg are combinable because they are from the same field of endeavor, i.e. image processing systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to raise alarm in the switching portion.

The suggestion/motivation for doing so would have been to provide the user with indication of what the image processing system is doing, thus providing a more user-friendly system.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Ito et al) with the indicator of Greenberg et al to obtain the invention as specified in claim 9.

35. Regarding claim 10, Greenberg et al discloses the alarm output portion raises the alarm, or turns on the indicator, when the switching portion switches (col. 14, lines 1-5). Kondo et al discloses that the switching portion, a controller, switches between the two-dimensional measurement portion and the stereoscopic measurement portion to perform an operation since it controls the operation of items 64 and 66 (fig. 2, item 62).

36. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Ito et al, and further in view of U.S. Patent Application Publication No. 20030081821 (Mertelmeier et al) and further in view of U.S. Patent No. 6597801 (Cham et al).

37. Kawashima et al (as modified by Ito et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference. Furthermore, Ito et al further

Art Unit: 2624

discloses different types of 2D (col. 7, lines 44-52) and 3D (col. 7, line 60- col. 8, line 6) measurements that can be made in 2D and 3D measurement portions, including finding a stereoscopic video signal.

Kawashima et al (as modified by Ito et al) does not disclose expressly reducing resolution of the images, and switches between generation of data with high resolution and generation data with low resolution appropriately to conduct stereoscopic measurement.

Mertelmeier et al discloses switching in alternation between a high and low resolution for stereoscopic imaging to develop multiply resolved images (pg. 1, pp 0008).

Kawashima et al (as modified by Ito et al) and Mertelmeier et al are combinable because they are from the same field of endeavor, i.e. 3D imaging.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to switch between high and low resolution for 3D imaging.

The suggestion/motivation for doing so would have been to provide a more robust system by allowing different, multiply resolved volume images (Mertelmeier et al, page 1, paragraph 002) for possible examination and a more flexible system for examination. Providing many resolutions is beneficial because this allows for a more effective search of images for size-based features, as disclosed by Cham et al (col. 8, lines 35-54), thus providing a more robust system.

Kawashima et al (as modified by Ito et al and Mertelmeier et al) and Cham et al are combinable because they are of the same field of endeavor, i.e. tracking objects.

Art Unit: 2624

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Ito et al) with the resolution switch of Mertelmeier and the reasons of having multiple resolutions of Cham et al to obtain the invention as specified in claim 11.

38. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Ito et al, and further in view of U.S. Patent No. 6396397 (Bos et al) and Examiner's Official Notice.

Kawashima et al (as modified by Ito et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al (as modified by Ito et al) does not disclose expressly each of the cameras includes an image pickup device in which a color filter having any one of three primary colors is arranged for each pixel, and when image data obtained by the cameras are processed, image data of pixels corresponding to only a color filter with a particular color in the image pickup device of each of the cameras are used.

Bos et al discloses a color filter (col. 7, line 56) on the sensors, which is equivalent to the camera, which is used to process image data corresponding to only a red color (col. 7, line 58-61).

Kawashima et al (as modified by Ito et al) and Bos and are combinable because they are from the same field of endeavor, i.e. tracking systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to filter the colors and process only a particular color.

Art Unit: 2624

The suggestion/motivation for doing so would have been to provide a specific use in the tracking system, such as tracking a tail light.

Kawashima et al (as modified by Ito and Bos et al) does not disclose expressly that the color filter has any one of the three primary colors arranged for each pixel.

Examiner takes official notice that it is well known in the art to separate primary colors, RGB, in a color filter.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to filter RGB.

The suggestion/motivation for doing so would have been to provide a user-friendly system by using a common way to separate colors.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Ito et al) with the tracking of red of Bos et al and the RGB filter of the Examiner's official notice to obtain the invention as specified in claim 12.

39. Claims 15, 24, 25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view Ito et al, as applied to claim 28 above, and further in view of U.S. Patent No. 3564132 (Baker et al).

Regarding claim 29, Kawashima et al (as modified by Ito et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al (as modified by Ito et al) does not disclose expressly that the controller is configured to switch from said second mode to said first mode based on an output from the stereoscopic image processing system which indicates the absence of

Art Unit: 2624

an object detected in the image data, obtained from both the cameras. In particular, Kawashima et al does not disclose expressly what to do when there is an absence of the object in image data at all.

Baker et al discloses when there is an absence of a person, the system resets (col. 7, lines 14-15). When the system of Kawashima et al resets, then the second mode would switch directly into the first mode, since the first mode is the first step of the system.

Kawashima et al (as modified by Ito et al) and Baker et al are combinable because they are from the same field of endeavor, i.e. image tracking.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to reset the system when no an absence is found.

The suggestion/motivation for doing so would have been to provide a way for more users to use the system by reading the system for another person, thus being a more cost-friendly, user-friendly system.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Ito et al) with the resetting of Baker et al to obtain the invention as specified in claim 29.

40. Regarding claim 30, Kawashima et al discloses the positional control portion is configured to control the positions of the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}) as seen in fig. 15, when the 2D measurement portion conducts 2D measurement, since the cameras follow an object (col. 15, lines 27-30) and controls the positions of the cameras so that the cameras

Art Unit: 2624

photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images.

41. Claim 15 is rejected for the same reasons as claim 29. Thus, the arguments analogous to that presented above for claim 29 are equally applicable to claim 15. Claim 15 distinguishes from claim 29 only in that they have different dependencies, all of which have been previously rejected. Therefore, prior art applies.

42. Claims 24 and 25 are rejected for the same reasons as claims 29 and 30. Thus, the arguments analogous to that presented above for claims 29 and 30 are equally applicable to claims 24 and 25. Claims 24 and 25 distinguish from claims 29 and 30 only in that they have different dependencies, all of which have been previously rejected. Therefore, prior art applies.

Conclusion

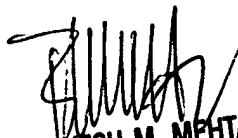
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen S. Yuan whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KY
1/14/2008


BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600